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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.:

10/557,755

Confirmation No.:

1626

First Named Inventor:

Gregory Branch

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April 13, 2005

Title:

FOAMED PET PACKAGING

Atty, Docket No.:

110120.403

## PETITION TO MAKE SPECIAL

This is a petition to have the above-identified application accorded "special" status under 37 CFR 1.102(c). This petition is based on the grounds that the invention will materially enhance the quality of the environment of mankind by contributing to the restoration or maintenance of the basic life sustaining natural elements, i.e., air, water, and soil. This petition is being accompanied by the following statement under 37 CFR 1.102 explaining how the materiality standard is met.

The present invention is directed to foamed containers made from a novel process. The foamed containers include shaped articles of manufacture such as, for example, foamed coffee cups and food packaging trays. More specifically, the inventive foamed containers are made from a sheet or roll of a thermoplastic material, wherein the thermoplastic material consists essentially of a virgin thermoplastic material admixed with a previously processed thermoplastic material (i.e., recycled plastic), wherein the virgin material and the recycled plastic are of the same chemical composition, and wherein the recycled plastic content is in an amount that ranges from about 5% to about

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100% by weight of the thermoplastic material. The novel process used to make the inventive containers involves exposing the virgin/recycled plastic mixture to a benign gas such as carbon dioxide (CO<sub>2</sub>) or nitrogen (N<sub>2</sub>) under an elevated pressure for an extended period of time such that the virgin/recycled plastic mixture becomes "gas impregnated." By suddenly reducing the pressure and optionally heating the gas impregnated virgin/recycled plastic mixture; a greatly expanded microcellular foamed structure is formed as a result of the gas being driven from solution and into a multiplicity of micro gas bubbles. The process applies to most common types of thermoplastic polymers including PET (polyethylene terephthalate), PS (polystyrene), ABS (acrylonitrile butadiene styrene), PVC (polyvinyl chloride), polycarbonate, acrylic, biopolmers (PLA), as well as other specialty polymers. The novel process enables deep-draw thermoforming of expanded thermoplastics with void fractions of greater than 80%. Importantly, the novel process can produce a wide range of inventive foamed containers with up to 100% recycled plastic and up to 60% post-consumer content. Moreover, and because the novel process does not chemically change the thermoplastic material. trimmings and related scrap associated with the thermoforming process can be reused in an essentially closed-loop recycling process.

As is appreciated by those skilled in the art, most conventional thermoforming processes use volatile organic compounds (VOCs) as the foaming agent. It is known that VOCs are harmful to the protective ozone layer of the Earth's atmosphere. In contrast to conventional thermoforming processes, the process associated with the making the foamed containers of present invention uses only benign gases such as carbon dioxide (CO<sub>2</sub>) and nitrogen (N<sub>2</sub>). In many instances, the process associated with the present invention can be used in lieu of a conventional thermoforming process that uses a VOC. Indeed, conventional thermoforming equipment can be, and are currently being, reconfigured and retro-fitted to accommodate the process associated with the present invention. As a result, foamed containers made with the novel process contributes to the restoration or maintenance of mankind's air, a basic life sustaining natural element, by significantly reducing the amount of VOCs emitted into the atmosphere. In addition, and because the inventive foamed containers can be made with up to 100% recycled plastic

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and up to 60% post-consumer content, the inventive foamed containers also contribute to the restoration or maintenance of mankind's soil, another basic life sustaining natural element, by significantly reducing the amount of thermoplastic material discarded into to landfills and the environment. For example, and in accordance with the process associated with the present invention, the plastic found in a common 20 ounce soda bottle is enough material to make seven 12 ounce coffee cups.

In view of the foregoing, applicant respectfully request that this petition to make special be granted.

Respectfully submitted,

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